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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,784	09/23/2003	Yoshihiro Akasaka	243106US2SRD	9555
22850	7590	05/01/2006		
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
			EXAMINER CANTELMO, GREGG	
			ART UNIT 1745	PAPER NUMBER

DATE MAILED: 05/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/667,784

Applicant(s)

AKASAKA ET AL.

Examiner

Gregg Cantelmo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-24 is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/23/03 &amp; 7/18/05</u> . | 6) <input type="checkbox"/> Other: ____.  |

**DETAILED ACTION**

***Ex Parte Quayle***

1. This application is in condition for allowance except for the following formal matters:

See items 4-7 below.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Information Disclosure Statement***

3. The information disclosure statements filed September 23, 2003 and July 18, 2005 have been placed in the application file and the information referred to therein has been considered as to the merits.

***Drawings***

4. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct

any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance. It appears that the fuel cell of Fig. 1 is a conventional fuel cell arrangement and exemplary of what is already known in the art. Thus it would appear that this figure should be labeled as prior art.

5. The drawings are objected to because the specific arrangement of the outlets 104b and 105b is unclear. In Fig. 1 the fuel outlet 104b is in the same plane as the fuel inlet 104a. The same is apparent for oxidant inlet 105a and oxidant outlet 105b. However in the systems of Figs. 2 and 3, the outlets 104b and 105b are switched and thus not in the same plane as their respective inlets. It is unclear how the reactant paths cross to reach their respective outlets and given the general configuration of the fuel cell of Fig. 1, disclosed as used in the system of Figs. 2 and 3, are not in agreement. It may be that the outlets 104b and 105b in Figs. 2 and 3 should be switched so as to be in the same plane as their respective inlets 104a and 105a. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes

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made to the brief description of the several views of the drawings for consistency.

Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

6. The abstract of the disclosure is objected to because it exceeds 150 words. A 150-word limit has been imposed by the USPTO to conform to PCT applications and Pre-Grant Publications. See 37 CFR 1.72 and rule changes applied thereto. Correction is required. See MPEP § 608.01(b).

7. The disclosure is objected to because of the following informalities: the word "diving" on page 19, line 25 should be --driving--. The regulating valve "20" identified on page 21, line 25 should be --V20-- since this is the reference character shown in Fig. 3 and since reference character 20 actually refers to the first tank.

Appropriate correction is required.

### ***Allowable Subject Matter***

8. Claims 1-24 are allowed.

The following is an examiner's statement of reasons for allowance: none of the prior art of record appears to teach, fairly suggest or render obvious the invention of claims 1-24. In particular: of the liquid fuel cell device having first and second tanks in

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the relationship defined in claim 1 wherein the first tank comprises the first internal liquid transfer device and a first external driving device provided outside the first tank and configured to drive the first internal liquid transfer device, the first driving device being physically separated from the first internal liquid transfer device.

U.S. Patent No. 6,303,244 discloses first and second tanks arranged in relation to each other as recited in claim 1. However the first tank does not include the first internal liquid transfer device and a first external driving device provided outside the first tank and configured to drive the first internal liquid transfer device, the first driving device being physically separated from the first internal liquid transfer device.

Rather the pump for driving the fluid flow is external pump 20.

While roller pumps are known as shown by JP 08-144958, combining this reference with U.S. Patent No. 6,303,244 fails to reasonably teach of the claimed invention for the following reasons: at best the combination suggests replacing the current pumping means 20 of U.S. Patent No. 6,303,244 in doing so the combination would still fail to teach or reasonably suggest the first internal liquid transfer device within the first tank and second would be indirectly physically connected as the roller pump (e.g. external driving device) would be in direct physical contact with the pumping line as shown in Fig. 2 of JP 08-144958.

None of the remaining prior art of record is held to teach or sufficiently suggest the arrangement discussed herein and more particularly claimed in claim 1.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent No. 6,686,081 discloses first and second fuel tanks 14 and 12 but also fails to disclose the first tank 12 having a first internal liquid transfer device and a first external driving device provided outside the first tank and configured to drive the first internal liquid transfer device, the first driving device being physically separated from the first internal liquid transfer device. U.S. Patent No. 5,249,957 discloses a method and apparatus for mixing fuel and water (see Fig. 2(a)).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregg Cantelmo whose telephone number is 571-272-1283. The examiner can normally be reached on Monday to Thursday, 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



gc

Gregg Cantelmo  
Primary Examiner  
Art Unit 1745

April 28, 2006